Chapter 2
Digital Literacy and the Emergence of Technology–Based Curriculum Theories

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ABSTRACT

A shifting focus in education is resulting in more networked, technology-enhanced classrooms. Contemporary educators need to be aware of the skill sets students require to thrive in twenty-first century educational environments. This developmental and learner-centered approach, known as digital literacy, enables students to use technology to find, evaluate, organize, create, and communicate information. This chapter, therefore, proposes a theoretical framework for teaching digital literacy. The authors examine contemporary learning theories, including connectivism and chaos and complexity theories, in an effort to promote further discussion on the epistemological development of digital literacy. Taking into consideration advantages and barriers to promoting digital literacy in the classroom, the authors propose best practices for educators seeking to incorporate these competencies into their curricula.

INTRODUCTION

Due to the proliferation of information found and managed online, students of all ages and across all disciplines need to be able to find, evaluate, use, share, and create increasingly large sets of new knowledge in a digital environment. Educators are now confronted with not only developing curricula that focus on key learning components, but also with incorporating curricua that highlight the technological skill sets students need to be successful learners. In other words, "today's students are no longer the people our education system was designed to teach" (Prensky, 2001, p. 1). From an epistemological perspective, these technologies are, or should be, as much a part of the curriculum

as more traditional learning objectives. In addition to the importance of information literacy during the late 20th century, this is why digital literacy is now receiving increased attention during the beginning of our current century.

Digital literacy is often defined as the combination of technical, cognitive, and social skills. As Gilster (1997) states, digital literacy is:

… the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers… It is a cognition of what you see on the computer screen when you use the networked medium. It places demands upon you that were always present, though less visible, in the analog media of newspaper and TV. At that same time, it conjures up a new set of challenges that require you to approach networked computers without preconceptions. Not only must you acquire the skill of finding things, you must also acquire the ability to use these things in your life (Gilster, 1997, p. 1-2).

Digitally literate students know how to use computers and other technological devices, and they are familiar with the internet and social media. However, the parameters of digital literacy also extend to higher level competencies in content creation, data management, social collaboration and communication, and a learner's ethical and social responsibilities in an online environment: "[a] fundamental aspect is an appreciation of the two-sided nature of the Internet, allowing the user to interact, communicate, and publish, as well as to access information" (Bawden, 2001, p. 246-247). The classroom is the ideal place to focus on these concepts, since students can experience and improve their digital literacy skills while creating objects that can be used for assessment purposes. For example, students studying art history might collect a series of images and reproductions of artwork found online and merge them together to create a digital mashup, representing an artistic period. Equally, students in any discipline can use audio and video recording and editing tools to create podcasts that they broadcast to their peers across the world.

Digital literacy does not stand-alone; rather, it fits into a framework with other 21st century skills found in contemporary classrooms. Information, socio-emotional, and photo-visual, among others, are all literacies that make up the concept of digital literacy (Eshet-Alkalai, 2004). Viewing digital literacy in the framework of other, perhaps more common, literacies can increase understanding of the skills that should be incorporated into today's curricula.

All students, regardless of age or level of education, are in a position to harness and focus these skills, many of which they are already somewhat familiar. Prensky (2001) calls these students *digital natives* and warns "as a result of this ubiquitous environment and the sheer volume of their interaction with it, today's students think and process information fundamentally differently" (p. 1). The impetus then falls to the educators to ensure these students are receiving the necessary education to perform successfully in the digital age. Digital literacy skills are essential for students who will face information overload during both their academic careers and in their professional lives. Moreover, students who enter the workforce will be expected to exhibit familiarity with networked technologies and proficient with digital tools. The purpose of this chapter is to explore the concept of digital literacy, to develop a theoretical framework for incorporating digital literacy into curriculum theories, to explore epistemological foundations behind this theoretical framework, and to identify best practices for implementation in current digital environments.

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